AMENDMENTS TO THE CLAIMS:

The current claims follow. For claims not marked as amended in this response, any difference in the claims below and the previous state of the claims is unintentional and in the nature of a typographical error.

1. (Previously Presented) A method for accomplishing state transitions in a configurable linear feedback shift register (LFSR) controlled by a clock, the length of the LFSR being represented by N, wherein a state vector represents the state of the LFSR, an output of the LFSR comprising W output symbols, W being at least two, and the output symbols being generated during one clock cycle, a state transition of the LFSR being accomplished during one clock cycle via multiplication of the state vector by a state transition matrix to the power of W (multiple state transition matrix), characterized in that said multiple state transition matrix is decomposed in a first matrix and a second matrix, the first matrix comprising at most $N + W + 1$ different expressions and the second matrix comprising at most $N + W + 1$ different expressions, wherein the elements of the second matrix are defined by:

$$G_{i,j} = \begin{cases} 1 & \text{, if } i - j = W \\ g_{i+j-N+1} & \text{, if } (i + j \geq N - 1) \wedge (j \geq N - W) \\ 0 & \text{, otherwise} \end{cases}$$

and the elements of the first matrix are defined by:

$$P_{i,j} = \begin{cases} 1 & \text{, if } i = j \wedge i < N - W \\ p_{i+j-2N+W+1} & \text{, if } i + j \geq 2N - W - 1 \\ 0 & \text{, otherwise} \end{cases}$$

wherein $p_0 = 1$, $p_i = \sum_{j=0}^{i-1} g_{N-i+j} p_j$ for $0 < i < N$, and g_0, g_1 up to and including g_{N-1} represent the configuration symbols which are comprised in the state transition matrix.

2. (Previously Presented) A method according to claim 1, wherein the expressions of the first matrix are evaluated during a configuration stage of the operation of the LFSR.

3. (Canceled)

4. (Previously Presented) A configurable linear feedback shift register (LFSR) controlled by a clock, the length of the LFSR being represented by N, a state vector representing the state of the LFSR, the LFSR being arranged to generate an output comprising W output symbols, W being at least two, to generate the output symbols during one clock cycle, the LFSR comprising multiplication means for accomplishing a state transition of the LFSR during one clock cycle via multiplication of the state vector by a state transition matrix to the power of W (multiple state transition matrix), characterized in that said multiple state transition matrix is decomposed in a first matrix and a second matrix, the first matrix comprising at most $N + W + 1$ different expressions and the second matrix comprising at most $N + W + 1$ different expressions, wherein the elements of the second matrix are defined by:

$$G_{i,j} = \begin{cases} 1 & \text{, if } i - j = W \\ g_{i+j-N+1} & \text{, if } (i + j \geq N - 1) \wedge (j \geq N - W) \\ 0 & \text{, otherwise} \end{cases}$$

and the elements of the first matrix are defined by:

$$P_{i,j} = \begin{cases} 1 & \text{, if } i = j \wedge i < N - W \\ p_{i+j-2N+W+1} & \text{, if } i + j \geq 2N - W - 1 \\ 0 & \text{, otherwise} \end{cases}$$

wherein $p_0 = 1$, $p_i = \sum_{j=0}^{i-1} g_{N-i+j} p_j$ for $0 < i < N$, and g_0, g_1 up to and including g_{N-1} represent the configuration symbols which are comprised in the state transition matrix.

5. (Previously Presented) A configurable linear feedback shift register (LFSR) according to claim 4, characterized in that the multiplication means comprises a first set of logical units for performing the multiplication of the state vector by the second matrix and a second set of logical units for performing the multiplication of the state vector by the first matrix.

6. (Previously Presented) A configurable linear feedback shift register (LFSR) according to claim 5, characterized in that the LFSR comprises a third set of logical units for computing the first matrix.

7. (Previously Presented) A configurable linear feedback shift register (LFSR) according to claim 6, characterized in that the third set of logical units is arranged to perform the computation of the first matrix during a configuration stage of the operation of the LFSR.

8. (Previously Presented) A configurable linear feedback shift register (LFSR) according to claim 7, characterized in that the second set of logical units is coupled to the first set of logical units via an intermediate data register.